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| 10/098,588      | 03/18/2002  | Michihiko Yanagisawa | 506212000600        | 7658             |

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Barry E. Bretschneider  
Morrison & Foerster LLP  
Suite 5500  
2000 Pennsylvania Avenue, N.W.  
Washington, DC 20006-1888

EXAMINER

KACKAR, RAM N

| ART UNIT | PAPER NUMBER |
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1763

DATE MAILED: 11/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.



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**GROUP 1700**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/098,588  
Filing Date: March 18, 2002  
Appellant(s): YANAGISAWA ET AL.

\_\_\_\_\_  
Barry E. Bretschneider  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 10/7/2004.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 2,3, 8 and 9 do not always stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Specification***

1. The disclosure is objected to because of the following reasons.

Applicant has defined a term “half value width” in paragraph 4 and 5. This term is derived from the etch profile in a unit time. In absence of operating parameters, material to etch and units to display the etch depth distribution, no standard length is disclosed.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-3 and 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for the following reasons. In these instances the radius of supporting face of wafer table is compared to objects whose length is variable. See MPEP 2173.05 (b).

In claims 2 and 8 in addition to comparing support face size to substrate size, it is also compared to an indefinite length parameter “half value width” referred to in the specification.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagisawa et al (US 5980769) in view of Shinozuka et al (US 6136213).

Yanagisawa et al disclose a local dry etching apparatus, gas activated species, wafer table with support face larger than disclosed substrate (Fig 11).

Yanagisawa et al do not disclose the radius of wafer table but disclose typical size of the nozzle to be 7 mm to 30 mm (Fig 15-16 and Col 2 lines 20-24).

Shinozuka et al disclose an etch profile of a similar local dry etching application and show that the etch depth is maximum at the central axis of the gas nozzle. Applying this to the situation where the nozzle is approaching the edge of the substrate, it is evident that for uniformity, the axis of the nozzle will have to reach at least the edge of the substrate.

This would therefore mean that at least half of the etch spot would be lying outside the edge of the substrate or the radius of table would be 3.5 to 15 mm larger than the substrate.

Since the claimed difference of radius of the substrate and table is found disclosed, the underlying structure of claim 2 and 8 being equivalent, is disclosed as well.

**(11) Response to Argument**

Applicant argues that “half value width” language is not indefinite because it provides clear warning to others as to what would constitute infringement of the patent.

If the applicant intends to state that “half value width” is not an indefinite length, the applicant has not disclosed any thing in the arguments to support that. The only new thing added is that the “half value width” is found after one minute etch, which is some improvement, but not enough to make it independent of processing parameters.

Regarding the warning to others, without a standard, it would be possible to find parameters which would result in a “half value width” which could make any other design in infringement, including the ones which did not use the approach taken by the applicant.

Examiner’s response to applicant’s argument against art rejection is based upon the following reasoning:

Since claim 3 depends from claim 2 these two claims must be consistent with each other. This means that, for the processes tried by the applicant resulting difference of radii fell in the claimed range. So that if the prior art discloses a difference of radii which falls within the claimed range, the claims would not be non-obvious. Similar reasoning applies to claims 8 and 9.

Examiners conclusion is based upon the understanding that the area of etch spot should always lie on the table for equipment safety and the axis of nozzle should at least reach the end of substrate for uniformity, since the rate of etch falls rapidly away from the center. Thus, a person of ordinary skill in the art at the time of invention could have designed the table with claimed difference without any consideration of applicants “half value width” approach.

Art Unit: 1763

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

RK 

November 1, 2004

Conferees

Glenn Caldarola

*for Gregory Mills. parviz hassanzadeh acting SPE*

Barry E. Bretschneider  
Morrison & Foerster LLP  
Suite 5500  
2000 Pennsylvania Avenue, N.W.  
Washington, DC 20006-1888

  
Glenn Caldarola  
Supervisory Patent Examiner  
Technology Center 1700